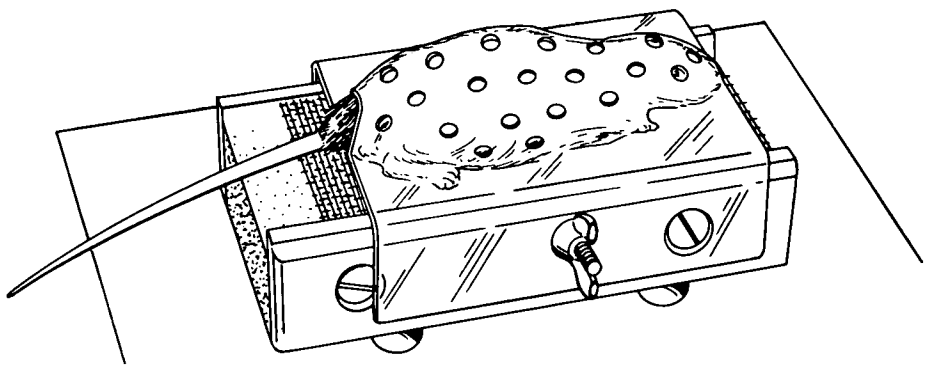
NASA TECH BRIEF

A Technique for Making Animal Restraints



The problem: Laboratory tests using animals are made difficult by an inability to completely restrain the subject. Conventional techniques employ a series of clamps or a plastic tube fitted with a plunger to hold the subject in place.

The solution: A plastic shell is thermoformed over the body of a representative specimen from a uniform colony of animals. The shell may be vented or cut in any pattern required for a specific test or experiment.

How it's done: The subject animal is restrained in the desired posture on a small pedestal and is anesthetized. The specimen is then frozen until rigid by a spray of CO_2 (from a fire extinguisher). The restraining devices are removed and the animal on the pedestal is placed on a wire mesh surface above a vacuum source. A sheet of plastic is heated in the thermoforming device until pliable, lowered over the specimen and the vacuum applied. The plastic hardens quickly on contact with the frozen surface, preserves the desired contours in precise detail, and is removed as a rigid shell. This plastic shell can be vented as desired. Areas requiring access to the animal may be cut out of the shell to facilitate work in localized zones.

Notes:

1. The technique may be applied to larger animals by reinforcing the plastic restraint with fiber glass or a like material.
2. A plaster model from the original plastic restraint would be useful for mass production.
3. Inquiries concerning this invention may be directed to:

   Technology Utilization Officer
   Ames Research Center
   Moffett Field, California, 94035
   Reference: B63-10564

Patent Status: NASA encourages the immediate commercial use of this invention. It was invented by two NASA employees and a patent application has been filed. Inquiries concerning license rights may be made directly to the inventors, Mr. Albert E. Clarke, Jr., and Mr. John Reitman at Ames Research Center, Moffett Field, California, 94035.

Source: Albert E. Clarke, Jr., and John Reitman
(ARC-25)